
Test Procedure for**DETERMINING BREAKING INDEX FOR ASPHALT EMULSIONS****TxDOT Designation: Tex-542-C****Effective Date: August 2002**

1. SCOPE

- 1.1 Use this procedure for determining the stability of an emulsion by measuring the amount of filler necessary to break 100 g of the emulsion. This amount of filler is the breaking index.
- 1.2 The values given in parentheses (if provided) are not standard and may not be exact mathematical conversions. Use each system of units separately. Combining values from the two systems may result in nonconformance with the standard.
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2. APPARATUS

- 2.1 *Metal beaker, 500 mL (1 pt.)*
- 2.2 *Glass stirring rod.*
- 2.3 *Balance, conforming to AASHTO M 231, Class G2 (accurate to ± 0.1 g).*
- 2.4 *Oven, capable of maintaining a temperature of $100 \pm 5^\circ\text{C}$ ($212 \pm 10^\circ\text{F}$).*
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3. MATERIALS

- 3.1 Use siliceous filler with the following properties to perform the test:
- must either be natural sand or a mixture of natural sand and silica flour with a minimum SiO₂ content of 98%,
 - specific gravity must be approximately 2.65,
 - dried in the 100°C (212°F) oven until its weight is constant, and
 - stored in a sealed container prior to use.

Table 1—Gradation Requirements for Siliceous Filler

Sieve Size, μm	% Retained
150 (#100)	0
106 (#140)	5–10
75 (#200)	40–50
45 (#325)	75–90

4. PROCEDURE

- 4.1 Add 100 ± 1 g of emulsion to the beaker.
- 4.2 Weigh the beaker, stirring rod, and emulsion together to the nearest 0.1 g.
- 4.3 Bring the beaker, stirring rod, and emulsion to $25 \pm 1^\circ\text{C}$ ($77 \pm 2^\circ\text{F}$), preferably by placing the beaker in a water bath at the specified temperature.
- 4.4 Add filler to the beaker at a rate of a few grams per second, while stirring the emulsion with the glass rod, and observe the color and consistency of the resulting mixture.
- 4.5 Stop adding filler when the emulsion/filler mixture becomes black and cohesive, with little free water present.
- 4.6 Weigh the beaker, rod, and emulsion/filler mixture to the nearest 0.1 g and record the result.
- 4.7 Subtract the original weight (measured in Section 4.2) from the final weight (measured in Section 4.6), and report this number as the breaking index.